LEARNING ABOUT STUDENTS *

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Differences Between Teaching and Learning

In our professional roles as university professors we tend to talk about the importance of teaching without recognizing that instruction is a meaningless concept unless we can show our students have learned something of value. Hence, for example, in our evaluation procedures we place great stress on evidence from rating forms that measure perceptions of an instructor's classroom performance, but very rarely examine what is accomplished in a course, the quality of work on assignments or examinations, and how this contributes to students' lives and careers once they have left the programme or institution.

One reason for this state of affairs may be that the beguilingly simple term "learning" covers a multitude of different concepts, encompassing memory, comprehension and understanding, acquisition of skills (both physical and intellectual), problem-solving, analysis and synthesis, as well as attitude formation and change. Another complication for the practising teacher is that, while a great deal is known about learning, not very much of the research in this area is of direct help to instructors who wish to enhance the quality of learning for their students. Although learning is perhaps the most prominent topic in all of psychology, most of the studies have been conducted on simple organisms (rats, pigeons) in settings far removed from the classroom. Even research which has focused on human learning in real life situations has for the most part confined itself to the early childhood years -- for example, Piaget's seminal work on cognitive development.

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This is not to say that learning research has failed to yield any precepts that could serve as a guide to teaching practice. However, the principles concerned are hardly revolutionary. Simply stated, they tell us that practice facilitates performance, that feedback (or "knowledge of results") enhances the beneficial effects of practice, and that learning is greatly encouraged when it is rewarded.

The Practice of University Teaching

Given the relative lack of a theoretical base for teaching practice, it is perhaps not suprising that a great deal of university teaching is extremely traditional, relying on a largely didactic model of instruction in which students are seen as "empty vessels" or "blank slates" to be filled up with knowledge transmitted via the lecture method and tested at regular intervals by examinations that rely heavily on accumulation of and memory for "facts". While this is clearly not true of all university education (project work and other types of individualized, independent learning are obvious exceptions), the predominance of the lecture method is not only conventional wisdom, but is supported by a number of surveys of university teaching methods. Lecturing is both the most popular method among faculty, and is also preferred by a great many students. It is perhaps ironical that, despite frequent claims about the potential of technology to revolutionize education, the predominant teaching approach in the latter part of the twentieth century is the same as that in vogue before the invention of the printed book.

Recent Research on Human Learning

Despite the somewhat gloomy picture painted above about the relative paucity of psychological research on learning that can inform the practising teacher, some relatively recent developments in learning research hold promise for an understanding of how students go about the business of studying. This research derives from a number of individuals working in different countries -- but relying greatly on a cross-fertilisation of

findings and methods of inquiry. The work is associated with the names of researchers such as Perry in the United States, Pask, Entwistle, Ramsden, and Parlett in Britain, Biggs in Australia, and Marton in Sweden. They have focused on the "phenomenological" world of the learner, generally in real life situations. By-and-large they eschew strict experimental methods (although they are willing to make use of them where appropriate), and -- although most are psychologists by training -- they adopt what might be termed an "anthropological" approach to the study of learning. In contrast to a great deal of traditional psychological research, which has been preoccupied with learning outcomes (often in relation to varying learning conditions, manipulated by the experimenter), these researchers have examined the process of learning or study, and have identified the different approaches, strategies, or styles that may be adopted by different groups of learners. Although the terms used to describe these learning approaches differ from one research team to another, the underlying concepts have a great deal in common. Perry identified three learning orientations, which he termed "absolutist", "relativistic", and an approach characterized by "personal commitment and reponsibility", with individuals progressing through each via Piaget-like stages of cognitive development. Miller and Parlett categorized learners as "cue-conscious", "cue-seeking", or "cue-deaf". Pask distinguished between "serialists" and "holists" (or, to use his earlier more evocative term, "stringers" and "lumpers"). Marton referred to "deep" and "surface" approaches to learning, while Entwistle, Hounsell, and Ramsden use the terms "meaning orientation" and "reproducing orientation".

Even for the reader who has never encountered this research, the meaning of the descriptive terms can be guessed at, and indeed the categories will have a certain intuitive appeal to university teachers who have monitored the way their students go about the task of studying. The commonalities between the different descriptors are evident. For example, students with a "meaning orientation" are similar to "deep learners" who are in turn "cue seekers", and so on. Furthermore, in contrast to a good deal of

American research on the learning style (for example that of Kolb, Bergquist and Phillips), the terms used by the researchers discussed here are unequivocally evaluative. In other words no bones are made about the superiority of the deep learner or cue seeker -- at least as far as most university-level work is concerned.

Implications for University Teaching

Assuming there is some validity in the results of this research to date, and that learners can be distinguished in terms of the way they understand the process of study, what are the implications for teaching practice in universities? In particular, do some teaching styles promote particular learning strategies? Can students change there strategies from less desirable orientations to ones that may be more suited for university-level learning? If so, how can this best be achieved?

There has been a flurry of recent interest in the question of how existing instruction in higher education affects student learning processes, with results that are both encouraging and discouraging. Two recent studies can serve as typical examples. In Australia, Watkins and Hattie carried out an ambitious longitudinal study of 540 university students as they proceeded through their undergraduate programme. They measured approaches to study by a number of different methods, including a questionnaire and personal interviews. The research revealed that students' learning did not become "deeper" (in Marton's sense of the word) -- a finding that is all the more discouraging in view of the fact that many of the weaker or more disillusioned students had withdrawn from the university before the final measures were taken -- meaning that the findings describe only those who "succeeded" in the system. Watkins and Hattie attribute their findings primarily to the examination system which, they conclude, encourages surface-level learning.

More optimistic conclusions can be drawn from an investigation by Ramsden and

Entwistle, who studied some 2,000 students in various British universities. There was no universal pattern of change in learning orientation over time. However, a relationship was discovered between deep learning and "good teaching", "greater freedom in learning", and "avoidance of overloading". Good teachers were defined by Ramsden and Entwistle as instructors who try to understand student difficulties, are ready to give help and advice on study, and take care to pitch material at an appropriate level for their students. The authors define "freedom in learning" as allowing students a choice of tasks to complete course requirements, and a choice of learning methods to accomplish these tasks.

What Can the Individual Instructor Do?

Although both the Watkins and Hattie and Ramsden and Entwistle studies paint a gloomy picture of much traditional teaching practice with respect to the encouragement of more sophisticated approaches to learning, their research is encouraging in the sense that it does show that the way we teach is important and can guide students away from surface-type learning and towards deeper approaches. These investigations, along with results from an increasing body of literature by the other researchers mentioned here, lead to a number of conclusions about university teaching and its effect on learning. Firstly, they tend to show that most learning takes place outside the lecture hall or classroom at times and in places where the students are left to their own devices and adopt their own study methods without recourse to the guiding hand of an instructor. Secondly, such learning is often guided by factors largely unknown to teachers -- the so-called "hidden curriculum" whereby students' study methods are determined largely by what they divine as the "demand characteristics" of the course, based upon a heady mixture of student gossip, past examination papers, hints by the professor about what will be on the final, allusive comments on essays and assignments, and similar factors. Thirdly, there is little doubt that the greatest of all these factors is the examination and grading system for the course. In other words, despite what might be said in the course

outline, covered in lectures and the textbook, or stated explicitly by the instructor, it is what's on the exam (or what is thought will be there) that largely determines not only the what of learning but also the how of learning. "Giving the professor what he wants" is a skill much worked at by many students, as evidenced by the questions on the first day of class about how the course will be graded and the constant scanning of the instructor's most chance remarks for clues about his expectations or biases.

What might the individual instructor do who wishes to encourage the deeper type of "meaning orientation" in learning that is generally claimed to be the aim of most university teaching? From the research discussed above it is possible to derive the following general prescriptions.

- Decide first what sort of learning it is important for your students to achieve in your course, paying particular attention to learning that will be of some value in the longer term after the individual has left university. Is mastery of facts the main objective? Acquisition of skills? Change of attitude?
- Honestly appraise your teaching in order to see how the course activities encourage or discourage the type of learning you hope to foster. Pay most attention to the tasks students must accomplish in the course (as opposed to the content you are transmitting), especially tasks that will be graded on exams or via assignments.
- It is possible that your aims for the course will primarily involve acquisition of facts -- but very unlikely if you are a university teacher. If you are trying to inculcate higher level skills then purely passive learning approaches are almost certainly inadequate and you will need to think of ways to encourage student activity, whether it be thorough-going discussion, extensive individual study outside the classroom, collaborative project work, etc.
- Avoid the mistake of assuming that what is taught (the course content) is the same as what is learnt (the process involved), and examine what you do in the

classroom -- and outside -- for cues that might contribute to the "hidden curriculum" and a misperception by students of your real learning objectives.

- If you agree that the process of learning is at least as important as mastering a body of facts, then those processes should be taught explicitly and not taken for granted. This may mean deliberate instruction in such skills as writing essays, effective problem-solving, working in groups, conducting independent research for assignments, making use of the library, and so on.

- Do not fall into the trap of equating "seat time" with learning time. Recognize that most learning takes place outside your purview and without your direct knowledge. Try to understand how your students study (perhaps by having them keep diaries, conducting class discussions about important projects, or interviewing individual students). Then try to discover how you can influence this process.

- Have regard to the findings of some of the research studies described here which indicate that the best role for a teacher is not as a simple transmitter of information, which can be accomplished in many different ways -- often by textbooks, readings, and other print media. In particular, attempt to arrange learning tasks that avoid baffling or overwhelming the student, while at the same time providing sufficient challenge to motivate excellent performance and active exploration of alternative methods of learning. If possible, recognize individual differences by allowing students to meet course requirements through choice among alternative tasks and by different learning methods.

- Do not ignore the lessons of conventional learning theory which suggest that a good teacher is someone who provides rewards, gives ample feedback on learning progress, and acts as a personal example or role model for effective learning.

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